Dealing with Head Lice: A Practical Approach for Schools, Parents, and Communities

Health Education Facts

The Nature of the Problem

Head lice are parasites capable of infesting the hair, eyebrows, and eye lashes of humans. They lay eggs (called nits) on the hair shafts and feed on human blood in adult and immature forms (nymphs). If uncontrolled, infestations can intensify, causing primarily itching. Excoriations, crusting, and secondary bacterial infections may result from excessive scratching of the scalp. However, head lice do not transmit other infectious agents such as bacteria or viruses, and do not have any serious health consequences.

Head lice are a common problem for parents and schools throughout Kansas and cause considerable disruption for families and school staff. One of the negative consequences of head lice for children is often the significant disruption of their educational experience. Parents may also miss work as a result of having to be home with their children on school days.

The information and recommendations given in this document are offered as a practical approach to the control of head lice, based on an objective understanding of transmission, treatment, and demonstrated effective control measures. This approach should result in reasonable control of head lice in schools and communities and minimal disruption of children's educational experiences.

Head Lice Transmission

Head lice transmission occurs when living lice move from one person to another, usually as a result of direct contact between the two. Living lice, not nits, transmit the disease. Head lice may also be transmitted by the sharing of combs, hair brushes, head gear, and other clothing which has direct contact with the hair. Although upholstered furniture can theoretically serve as a transmitter of lice in the way that some clothing does, large objects such as furniture and household items such as carpets and rugs play a relatively small role in transmission. Bed clothing may play a role in transmission; however, transmission associated with a bed is more likely due to the direct contact during sleep by two individuals sharing the bed. It is also important to understand that furniture (including beds), carpets, rugs, and buildings do not become infested with lice. Lice cannot reproduce away from the human host.

The behaviors and play habits of young children commonly involve the kind of contact likely to transmit lice. Consequently, head lice are a greater problem in young children (pre-school and lower elementary grades) than in older children and adults. The same behaviors and play habits which may transmit head lice in school settings are also common in homes, neighborhood playgrounds, and other places where children interact. It is a common perception that head lice "outbreaks" are usually associated with schools; however, community settings also play a significant role in the transmission of lice. Apparent "school outbreaks" probably reflect also community-wide transmission of head lice, which is more readily recognized at the school where children congregate. Therefore, control efforts directed only at the school setting are unlikely to be successful.

Treatment of Head Lice

Primary treatment of head lice is accomplished by the use of any of several approved pediculocidal (louse-killing) applications including the prescription product lindane and the non-prescription products, permethrin (NIX) and the pyrethrin agents (Rid, Pronto, R & C Shampoo, XXX, etc.). Other medications such as malathion and ivermectin may be effective but are either not available or not approved for use in humans in the United States. Treatment failures with the use of approved products are commonly

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reported to school and public health officials, and there seems to be growing evidence that some lice are becoming resistant to these pediculocides. However, it is often difficult to determine if an apparent treatment failure is due to true resistance, to inappropriate application of the treatment, or to re-infestation from another source. Regardless of the reason, it has become increasingly apparent that simply applying a pediculocidal shampoo does not constitute "adequate treatment" of head lice. Significant additional (daily) attention must be given to the situation by the child's parent(s) or other caretaker(s) until the lice are controlled. The following **two-week** regimen is recommended to treat a head lice infestation.

Day 1:	Apply pediculocidal shampoo followed by a thorough fine-tooth wet combing. This should kill most adults and nymphs and remove most viable nits.
Days 2 -6:	**Daily** apply ordinary shampoo followed by cream rinse and a thorough fine-tooth wet combing. This should remove additional adults, nymphs, and nits.
Day 7:	Apply pediculocidal shampoo followed by a thorough fine-tooth wet combing. This should kill and remove most remaining adults, nymphs, and some nits.
Days 8-14:	**Daily** apply ordinary shampoo followed by cream rinse and a thorough fine-tooth wet combing. This should remove residual adults and nymphs.

During the course of the above regimen, the parent(s) will observe a continual reduction in the number of adult lice and nits removed with each combing. From the standpoint of effective treatment of an individual child, less attention needs to be given to nit removal. All original viable nits should have been killed or have hatched, and few additional nits should have been laid as a consequence of daily removal of nymphs and adults. Parents should continue weekly inspections of their children for lice throughout the school year.

Control of Head Lice: Home

The home is the primary point of control for head lice. Parents should assume that head lice are present in the schools as well as other community settings at all times, and children should be inspected weekly for lice by their parents. Inspection is most effective when done with a fine tooth comb and when the hair is wet at a regular time of shampooing. When a member of a household is found to be infested with lice, **all** members of the household should be examined, and **all** infested members should be treated at the same time with the regimen described above. Environmental efforts can be limited to the laundering of all bed linens and clothing worn by infested individuals on the day of diagnosis. Extensive cleansing, vacuuming, and spraying of upholstery, carpets, beds, and other household items and structures is of limited effectiveness and is not recommended. Parents will do better to redirect their energies from such environmental efforts to daily attention to the infested child, which is necessary for the recommended treatment regimen to be effective.

Control of Head Lice: School

Screening: Routine, frequent screenings for lice in schools have not been shown to be effective in the control of head lice and should probably be limited to pre-school classes where frequency and directness of contact between children are greater than among school-aged children. Although an annual screening early in the school year may be useful, frequent, repeated screenings probably do little more than consume the time of school employees and disrupt the educational process. All screening practices should be coupled with parental notification procedures and the distribution of treatment and management guidance to parents at the beginning of the school year and again to parents of infested children identified in the school setting.

Exclusion: When a child is discovered to have lice at school , he/she may be sent home at the end of the day with a proviso that he/she begin treatment prior to return, as required by state regulation. The American Academy of Pediatrics recommends that a child be allowed to return to school after the first treatment with a pediculocidal shampoo. Current Kansas state regulation requires that children be nit-free prior to returning to school, although this exclusion practice has not been proven to be effective in reducing transmission of the infestation and is not recommended by the American Academy of Pediatrics.

Conclusion

In order for individual head lice cases and apparent head lice outbreaks to be managed in an optimal way, parents, teachers, and health care professionals should reach a common understanding and acknowledgment of the following principles:

1. A head lice infestation is a mild health condition without serious health consequences for a child, and should not be considered as a major health threat to those infested or those potentially exposed.

2. Head lice can not be completely eliminated from communities or schools. Neither the occurrence of a case nor an outbreak should be considered as evidence of a breakdown in hygienic practices on the part of individuals, families, or schools.

3. The most effective point of control of head lice is the household. Parents, not school employees, are best suited to screen their children for head lice and to properly treat and control lice within the household.

4. School policies should reflect the mild nature of this health condition, the impracticality of total elimination, and the low risk of transmission by a child under treatment. Policies and practices should have minimal disruptive effect on children's educational experiences and minimal stigmatizing impact on children.

References

Ibarra, J. and Hall, D.M.B. "Head Lice in school children." *Archives of Disease in Childhood*. Vol. 75(6):471-3, December, 1996

American Academy of Pediatrics, *1997 Red Book*. pp 387-90 (Elk Grove Village, IL: AAP, 1997).